

WHAT IS CLAIMED IS:

CLAIMS

1. A DNA molecule encoding for a polypeptide including an amino acid sequence which is receptive to imidazoline compounds, said DNA molecule containing a DNA sequence with at least 75% sequence similarity with the DNA sequence shown in SEQ ID No. 4.
2. A DNA molecule according to claim 1, containing a DNA sequence with at least 75% sequence similarity with the DNA sequence shown in SEQ ID No. 2.
3. A DNA molecule according to claim 2, containing a DNA sequence with at least 75% sequence similarity with the DNA sequence of SEQ ID No. 3.
4. A DNA molecule according to claim 3, containing a DNA sequence with at least 75% sequence similarity with the DNA sequence of SEQ ID No. 1.
5. A DNA molecule according to any one of claims 1 to 4, containing a DNA sequence with at least 80% sequence similarity with the sequence of said SEQ ID No.
6. A DNA molecule according to any one of claims 1 to 4, containing a DNA sequence with at least 85% sequence similarity with the sequence of said SEQ ID No.

31. A polypeptide as defined in claim 20, having a molecular weight of about 70 kDa.

22. A fragment of the amino acid sequence shown in SEQ ID No. 5 or 6, which fragment is receptive to imidazoline compounds.

23. A polypeptide according to any one of claims 16 to 22, which is immunoreactive with at least one of Reis antiserum and Döntenwill antiserum.

24. A polypeptide according to any one of claims 16 to 23, which is a human polypeptide.

25. A method of producing an isolated polypeptide including an amino acid sequence which is receptive to imidazoline compounds, said method comprising:

transfecting a host cell with a vector as defined in claim 14; and

culturing the transfected host cell in a culture medium to express the polypeptide.

26. An isolated polypeptide including an amino acid sequence which is receptive to imidazoline compounds, which polypeptide is expressed by the method of claim 25.

7. A DNA molecule according to any one of claims 1 to 4, containing a DNA sequence with at least 90% sequence similarity with the sequence of said SEQ ID No.

8. A DNA molecule according to any one of claims 1 to 4, containing a DNA sequence with at least 95% sequence similarity with the sequence of said SEQ ID No.

9. A DNA molecule according to claim 1, which is deposited with the ATCC under deposit accession no. ATCC 209217.

10. A genomic DNA molecule encoding for a polypeptide including an amino acid sequence which is receptive to imidazoline compounds, and wherein exon portions of said genomic DNA molecule include the DNA sequence as defined in claim 1.

11. A genomic DNA molecule according to claim 10, which is deposited with the ATCC under deposit accession no. ATCC 209216.

12. A 1110 bp ApaI-EcoRI restriction fragment of the DNA molecule according to claim 1.

13. A 1.85 kb EcoRI restriction fragment of the DNA molecule according to claim 4.

14. A vector containing a DNA sequence as defined in any one of claims 1-13.

15. A host cell transfected with a vector as defined in claim 14.

16. An isolated polypeptide including a site which is receptive to imidazoline compounds, said polypeptide containing an amino acid sequence with at least 80% sequence similarity with the amino acid sequence shown in SEQ ID No. 6.

17. A polypeptide as defined in claim 16, having a molecular weight of about 35 to 45 kDa.

18. A polypeptide as defined in claim 17, having a molecular weight of about 37 kDa.

19. An isolated polypeptide including a site which is receptive to imidazoline compounds, said polypeptide containing an amino acid sequence with at least 80% sequence similarity with the amino acid sequence shown in SEQ ID No. 5.

20. A polypeptide as defined in claim 19, having a molecular weight of about 60 to 85 kDa.

27. A method of screening for a ligand of an imidazoline receptor, which method comprises:

culturing a host cell as defined in claim 15 in a culture medium to express a polypeptide including an amino acid sequence which is receptive to imidazoline compounds;

contacting said polypeptide with a labelled ligand for the imidazoline receptor under conditions effective to bind the labelled ligand thereto;

contacting said polypeptide with a candidate ligand; and detecting any displacement of the labelled ligand from said polypeptide, wherein displacement signifies that the candidate ligand is a ligand for the imidazoline receptor.

28. The method of claim 27, wherein said contacting steps are performed in an intact cultured host cell.

29. The method of claim 27, further comprising isolating the cell membrane of said cultured host cell prior to performing said contacting steps.

30. The method of claim 27, wherein said contacting of said imidazoline receptive polypeptide with said candidate ligand is conducted at a plurality of candidate ligand concentrations.

31. The method of claim 27, wherein the labelled ligand is radiolabelled.

32. A method of obtaining a DNA material encoding a polypeptide which is receptive to imidazoline compounds, said method comprising:

providing a labelled DNA probe by labelling a DNA molecule identical or complementary to a DNA molecule as defined in any one of claims 1 to 9 or a restriction fragment thereof;

contacting said DNA probe with genetic material suspected of encoding said imidazoline receptive polypeptide;

hybridizing said DNA probe and said genetic material under stringent hybridization conditions;

identifying any portion of the genetic material which hybridizes to said DNA probe; and

isolating said identified material.

33. A method according to claim 32, wherein the genetic material is derived from a library selected from the group consisting of RNA library, cDNA library and genomic DNA library.

34. A method according to claim 33, wherein said library is a human library.

35. A method according to claim 32, wherein the labelled DNA probe is provided by labelling a restriction fragment according to claim 12 or 13.

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isolating antibodies produced by the animal.

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